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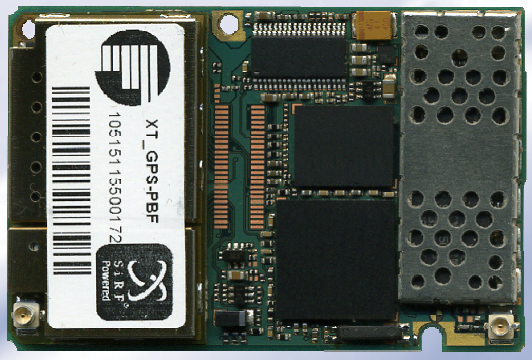

XT55/56

GPS Startup

Siemens Cellular Engine

Version: **v04**
DocID: **XT5x_GPS_startup_ug_v04**

User's Guide

Document Name:	**XT55/56 GPS Startup User's Guide**
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0 Document history

Preceding document: "XT55 GPS Startup User's Guide" Version 03
New document: " XT55/56 GPS Startup User's Guide" Version **v04**

Chapter	What is new
---	Removed all AVL related descriptions.
2.1	Default baud rate 9600. Minor text changes.

Preceding document: "XT55 GPS Startup User's Guide" Version 02a
New document: " XT55/56 GPS Startup User's Guide" Version **v03**

Chapter	What is new
---	Renamed document title from "XT55 GPS Startup User's Guide" to "XT5x GPS Startup User's Guide"

Preceding document: "XT55 GPS Startup User's Guide" Version 02
New document: " XT55 GPS Startup User's Guide" Version 02a

Chapter	What is new
---	Revised chapter: Downloading AVL software

Preceding document: "XT55 GPS Startup User's Guide" Version 01
New document: "XT55 GPS Startup User's Guide" Version 02

Chapter	What is new
2nd cover page	New version of General Notes
2	The pre-defined baud rate is set to 4800 bps, revised Figure 2
---	Added new chapter: Downloading AVL software

1 Introduction

This brief guide explains how to establish a GPS connection using the XT55/56 module.
The Global Positioning System (GPS) is a world-wide navigation system from 24 satellites. It uses at least 4 satellites as reference points to calculate the current position.
The GPS receiver embedded in the XT55/56 module constantly tracks all satellites in view, thus providing accurate satellite position data. It allows a quick and uncomplicated configuration and evaluation by the user via local RS-232 interface (directly connected to the serial port) or via remote (e.g. installed in a vehicle) GSM (air link).
With the Windows™ HyperTerminal application (utility which is pre-installed on all versions of MS Windows) it is possible to receive GPS position data and alarm status reports, as well as to execute a range of remote configurations. If the XT55/56 is configured remotely, prerequisite is the connection of a suitable GSM modem.

1.1 Related documents

[1] XT55 AT Command Set
[2] XT56 AT Command Set
[3] XT5x Hardware Interface Description
[4] XT5x GPS Command Specification
[5] GPRS Startup User's Guide
[6] Remote-SAT User's Guide
[7] GSM / GPS Evaluation Board Description
[8] Application Note 14: Audio and Battery Parameter Download
[9] Application Note 02: Audio Interface Design
[10] Multiplexer User's Guide
[11] Multiplex Driver Developer's Guide for Windows 2000 and Windows XP
[12] Multiplex Driver Installation Guide for Windows 2000 and Windows XP
[13] Application Note 24: Application Developer's Guide

Prior to using the XT55/56 engines or upgrading to a new firmware release, be sure to carefully read the latest product information.

To visit the Siemens Website you can use the following link:
http://www.siemens.com/wm

1.2 Terms and abbreviations

Abbreviation	Description
bps	Bit per Second
CRLF	Carriage Return/Line Feed
GPI	General Purpose Input
GPS	Global Positioning System
GSM	Global Standard for Mobile Communications
NMEA	National Maritime Electronics Association

2 Getting started

Please ensure that the XT55/56 module connects properly to the application platform. In order to prevent mechanical damage, be careful not to force, bend or twist the module.

2.1 Terminal emulator setup

The example below is based on the Windows™ HyperTerminal application (terminal emulator program), but XT55/56 can also be configured using other terminal programs. The XT55/56 is used with a PC running MS Windows.
At the first power-up you can use the terminal software, which establishes the communication with a modem via a RS-232 serial port.

Start the Hyper Terminal program. Assign the name for a new session on the displayed window (e.g.XT55 or XT56).

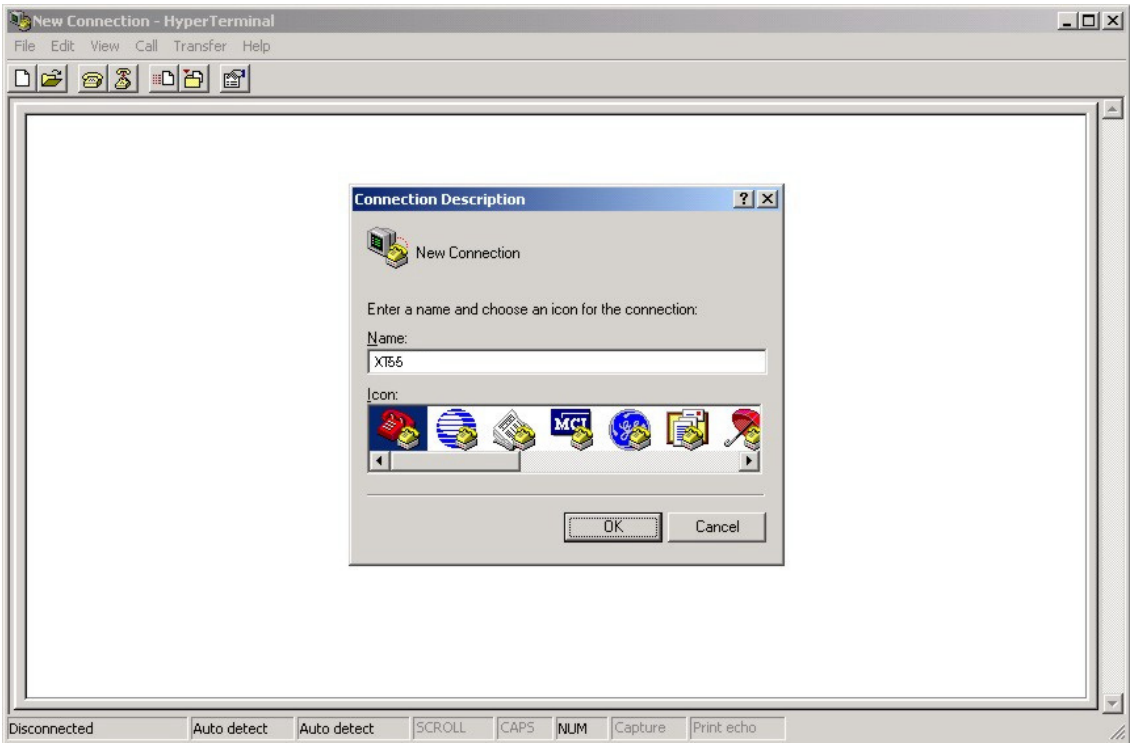

Figure 1: Assign the name for a new session

Press the OK button and select a COM port.

The appearing dialog box shows the default settings for the selected COM port.
NOTE: The pre-defined factory settings of the XT55/56 GPS port SDn1 (9600bps, 8 data bits, no parity, 1 stop bit, no flow control) cannot be changed, otherwise no connection to the XT55/56 GPS port will be established.

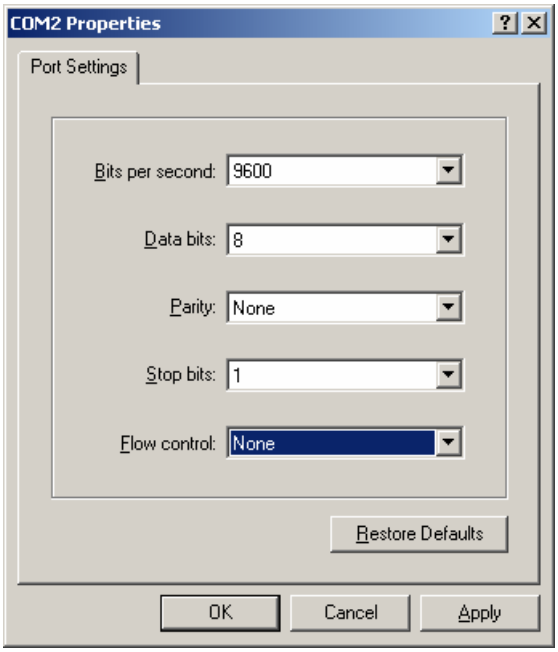

Figure 2: COM port transmission settings

If a connection to the XT55/56 module has been established, the transmitted protocols will be displayed. See [4] for NMEA details.

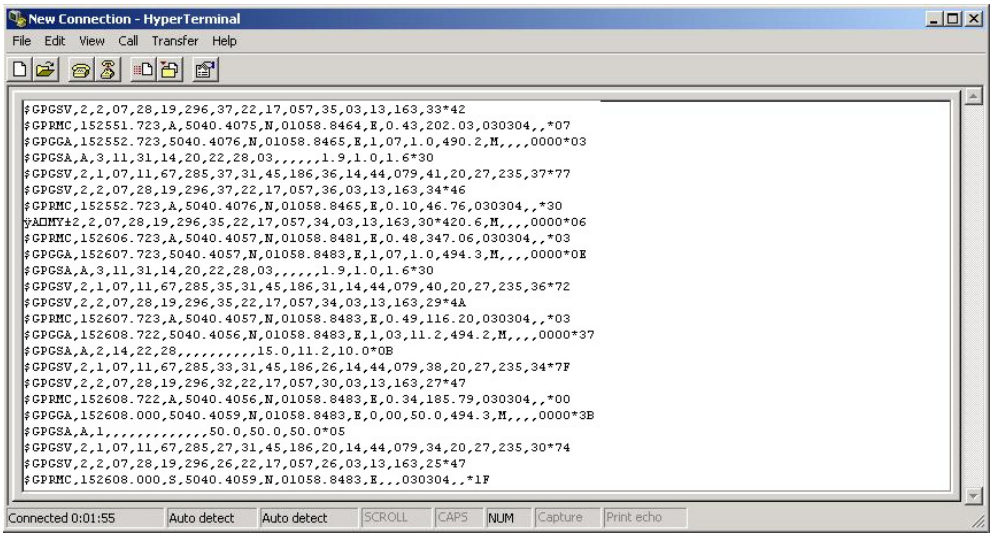

Figure 3: Displaying the transmitted NMEA protocols

2.2 Evaluating GPS data using SiRFdemo software

To evaluate GPS data it is necessary to use special GPS software like the provided SiRFDemo software.

- Before running the software, ensure that your PC is recognizing the XT55/56 module properly. In order to receive satellite signals, the XT55/56 must be placed in such way that the receiver has a clear view of the sky.
- To start the SiFRDemo software either double click the **SiRFdemo.exe** file or, if you have created a short cut to your desktop, click on the SiRFdemo icon. The SiRFDemo program will be automatically installed onto your computer.
- On the activated **Data Source Setup** window, select the COM port (e.g. COM5) for SiRFdemo program and set the baud rate to 9600 bps.

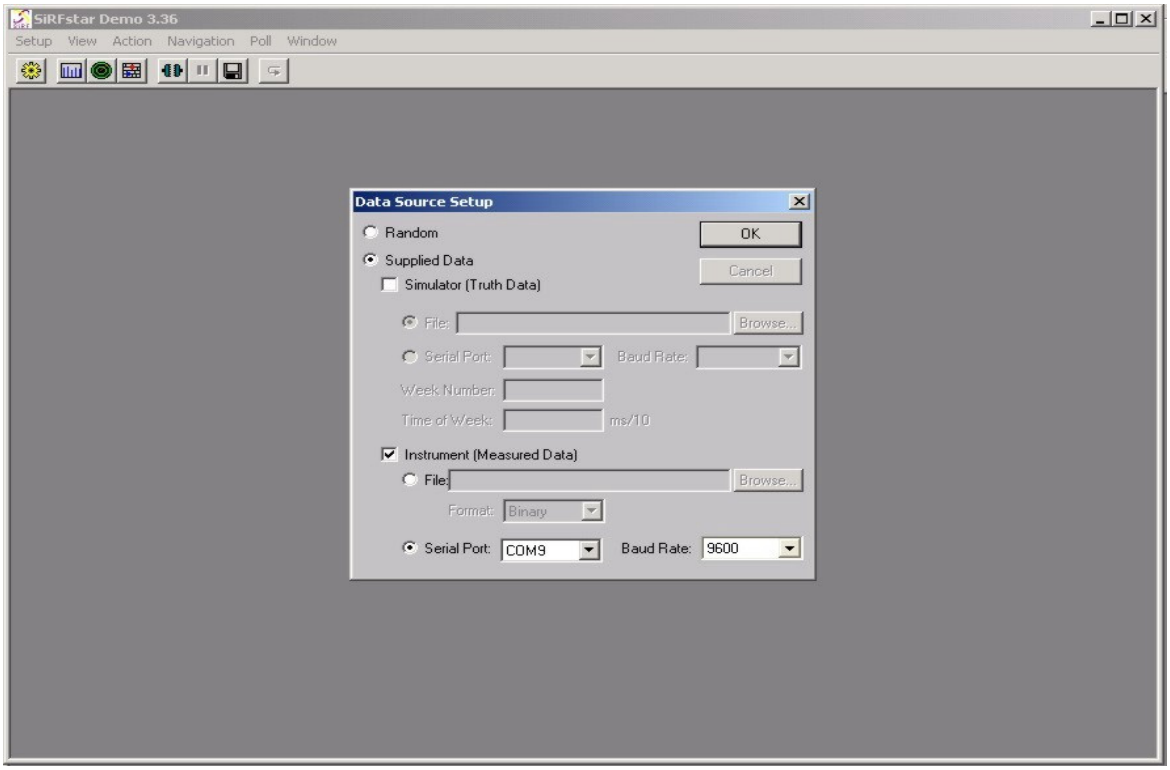

Figure 4: COM port selection

- Click the **Connection/Disconnection** icon on the toolbar by the up-down button (see Figure 5), the program will then automatically connect to **Data Source** and starts evaluating.

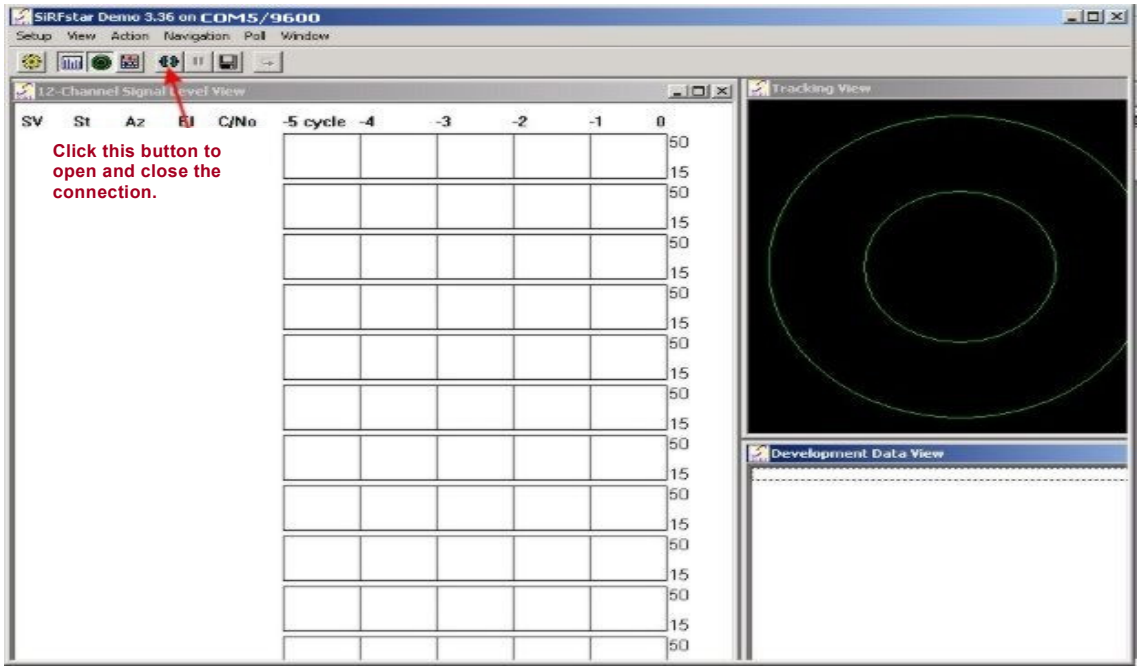
SiRFstar Demo 3.36 on COM5/9600
Setup View Action Navigation Poll Window
12-Channel Signal Level View
SV St Az El C/No -5 cycle -4 -3 -2 -1 0
Click this button to open and close the connection.
Tracking View
Development Data View

Figure 5: SiRFstar demo on selected COM port

- The output messages can be viewed in the Development Data screen. For a description of NMEA messages refer to [4]. The valid/invalid protocols can be recognized on the $GPRMC protocol as shown in figure below. The capital letter "A" means, incoming protocols are valid while the capital letter "V" means incoming protocols are invalid.

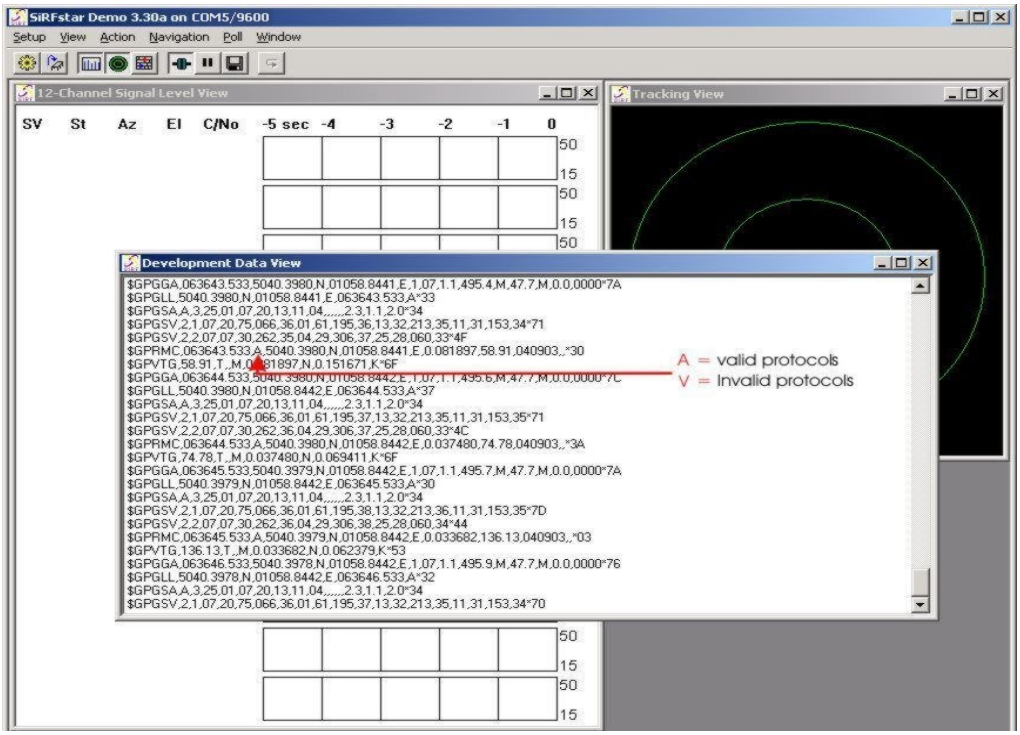
SiRFstar Demo 3.30a on COM5/9600
Setup View Action Navigation Poll Window
12-Channel Signal Level View
Tracking View
Development Data View
A = valid protocols
V = Invalid protocols

Figure 6: Development data screen

- If the XT55/56 module is receiving valid GPS positions, click the **Map View** icon on toolbar by the up-down button (see marked button in figure below), the user can see the updated data of longitude, latitude, altitude, date time etc.

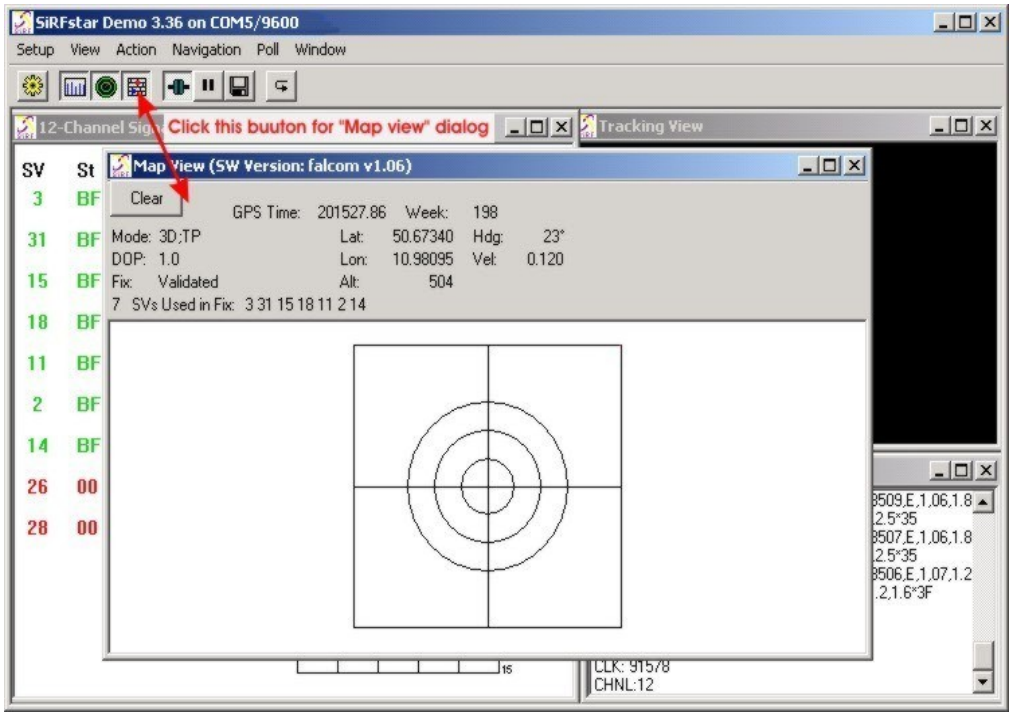

Figure 7: Updating GPS data in Map view

3 Hardware components overview

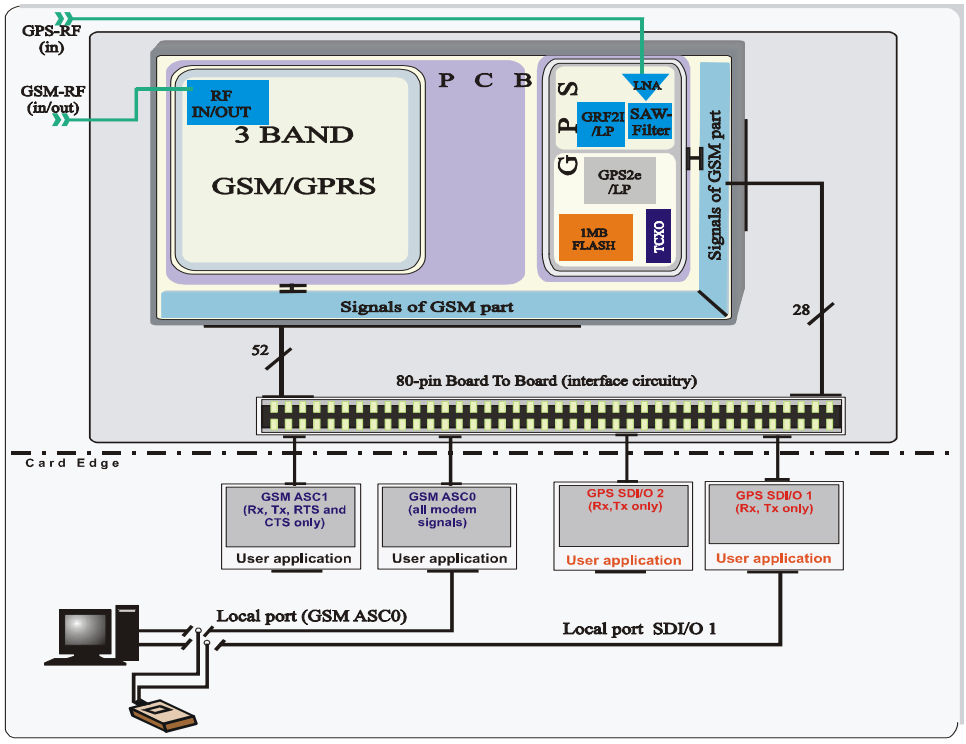

Figure 8: Block diagram of XT55/56 for SiRF Demo application